



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

A. 2  
6/11/97

REPLY TO THE ATTENTION OF:

June 11, 1997

US EPA RECORDS CENTER REGION 5



471763

**VIA FACSIMILE & 1ST CLASS MAIL**

John Seymour  
Woodward-Clyde Consultants  
38777 W. Six-Mile Road, Suite 200  
Livonia, MI 48154

**Re: Albion Sheridan Landfill Superfund Site  
Comments on Final Design**

Dear Mr. Seymour:

The U.S. EPA and Michigan DEQ have reviewed the preliminary design for the Albion-Sheridan Landfill and we are unable to approve the document at this time because it does not comport with the Record of Decision. Listed below are our comments which we would be willing to discuss with you via a conference call if that is your desire.

**General Comments**

There is inconsistency between terminology throughout the document text, appendices, and design drawings with regard to the cover system. Please use consistent terminology (i.e. Flexible Membrane Liner = Geosynthetic Membrane = Geosynthetic Membrane Liner = Geomembrane).

**Groundwater - Surface Water Interface (GSI) Issues**

The information provided by Woodward-Clyde after our May 27, 1997, conference call, was information already contained in the Pre-Design Studies Report. As already stated by MDEQ, it is necessary to either meet the Generic GSI criteria or request a mixing zone determination by MDEQ's Surface Water Quality Division (Operational Memorandum #17). The liable party group can also place wells closer to the river in hopes that natural attenuation and/or dilution would decrease contaminant levels that may be entering the river.

### **Monitoring Well Placement (MW09) Issue**

The Final Design Report does not have information to support the assessment that all groundwater flowing south vents to the river. There is a small upward gradient at the MW-16 cluster. What is the upward gradient that Woodward-Clyde has calculated for this well cluster? The cluster is approximately 135 feet from the river and not immediately adjacent to the river. Given the gradient and the distance to the river, it may be unlikely that all groundwater flowing south will vent up to the river. According to the information Woodward-Clyde has provided, the vertical gradient is 0.14 ft/40 ft or 0.0035 ft/ft. Although it is very possible that the glacial aquifer and some bedrock aquifer groundwater vents, it is more likely that some groundwater flows to the other side of the river. The low concentration of arsenic in MW-13SG supports the probability the component of groundwater that flows south to the river does not completely vent to the river.

If Woodward-Clyde has evidence to prove or support that the groundwater flow is toward the river on the opposite or south side of the river, please provide it for agency review. If Woodward-Clyde is unwilling or does not have the documentation to support their conclusion, it will be necessary to install MW-09 (#?) in the shallow or weathered bedrock on the south side of the river.

The cross-section Woodward-Clyde included in the design documents shows MW-13SG as a very shallow well, but with much geology beneath it. Does Woodward-Clyde have additional geologic or hydrogeologic information south of the river? How is the presence of arsenic in the well explained?

MDEQ would like to include clarification in the design report that the use of the on-site borrow source is pending, based on testing results. An alternative borrow source should be identified and available for use if the on-site borrow source is identified to contain an unusable quality of soil.

### **Specific Comments**

#### **VOLUME 1 TEXT**

Page 2-4, Contingent Remedy, 2nd bullet

The SOW does not specify "in a residential well that existed on the day the ROD was signed....".

Table 3-1, ARARS Summary

Please specify the ARARs specific to landfill gas and landfill gas monitoring.

Page 5-2, Technical Specifications

Please add the technical specifications detailed in the comments for Appendix E to this list.

**APPENDIX A - DESIGN CALCULATIONS**

The design calculations are conservative, yet reasonable. We have no comments on this appendix.

**APPENDIX B - PERFORMANCE MONITORING PLAN**

Section 2 - Drum Removal and Treatment Monitoring

At this point in the design, this section is inadequate.

Page 2-1, 1st paragraph

There is no "Contract Specification 02212." Either add or delete this reference. In addition, the Health and Safety portion of the Contract Specifications reference drum sampling and testing but do not provide any details. When the "Contractor" submits the "Drum Sampling and Testing Plan", this should be provided to U.S. EPA for comment and review. Failure to provide the "Drum Sampling and Testing Plan" in the 95% Design will delay the project.

Page 2-1, Section 2.1 Performance Monitoring Requirements

The air monitoring requirements included in the Model Health and Safety Plan leaves much to the discretion of the SSO. This is unacceptable. Please review comments on Model Health and Safety Plan. When the "Contractor" submits the "Final Health and Safety Plan", this should be provided to the U.S. EPA for comment and review. Failure to provide the "Final Health and Safety Plan" in the 95% Design will delay the project.

Section 3 - Landfill Cap Construction Monitoring

The air monitoring requirements included in the Model Health and Safety Plan leaves

much to the discretion of the SSO. This is unacceptable. An HNu will not detect methane.

— **Section 4 - Landfill Gas Collection System Monitoring**

Methane measurements of "two gas vent locations..." (which are incidentally not shown specifically on the design drawings) is not adequate to detect the lateral migration of methane gas through the subsurface. Given the following facts, a comprehensive landfill gas monitoring system is crucial:

- the final grades slope to the northeast (towards the subdivision);
- an extremely impermeable cover system will be installed;
- the horizontal gas venting system does not extend to the base of the waste; and
- the system is a passive system versus an active landfill gas venting system.

In the "Final Design", please provide extensive details on a landfill gas monitoring system including specifications for landfill gas probes (design and installation), slip cap system with a tap to incorporate a hose barb for sampling, landfill gas spacing (suggest at 200 feet around the perimeter of the landfill - outside the waste material), sample parameters, method of sampling, sampling equipment, sample frequency (quarterly at a minimum to begin), etc.

**APPENDIX C - CONSTRUCTION QUALITY ASSURANCE PLAN**

Throughout this section, references are made to performing work as outlined in the "Project Specifications". Could you please reference the specific "Project Specification" for easier review and reference?

Page 4-2, Section 4.3 QC Personnel Qualifications and Responsibilities

Do you feel a need to approve or disapprove of the Geosynthetic testing laboratory? "The Group" has apparently pre qualified four laboratories.

Page 4-5, 2nd paragraph

What is the "project manual" that is referred to in this paragraph?

Page 4-5, Section 4.5.1, Waste Consolidation, last paragraph

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Again, the "Contractor's site-specific Health and Safety Plan" should be sent to the U.S. EPA for review and comment.

Page 4-8, Shipment, Storage and Handling

How are the Installer and the QC Personnel going to determine if there are defects without unrolling the rolls?

Page 4-14, last bullet

Is this supposed to read "previously tested and *rejected*..."?

Page 4-16, Soils, 4th bullet

The bullet states that a "minimum thickness of 3 feet of soil is required between rubber-tired vehicles and the Geosynthetic membrane." Only 2 feet of soil is specified to be placed on top of the Geosynthetic membrane (18" cover soil, 6" topsoil). In addition, this is inconsistent with Page 4-18, 1st paragraph. Please resolve.

#### **APPENDIX D - DRAFT OPERATIONS AND MAINTENANCE PLAN**

Page 3-1, Section 3.1 Groundwater Monitoring Modifications

The proposed abandonment of MW11SG and MW13SG appear to be sensible. Neither of these wells were included for sampling per the SOW.

Figure 4, Annual O&M Monitoring Well Location Map

Please add the following wells to this map to be consistent with the SOW: MW04SB2, MW05SB, MW06SB, MW08SB, and MW09SB.

Table 1-1, Summary of O&M Sampling and Analysis Program

Drinking Water Wells - Please add TAL metals to the laboratory parameters. Also specify that these are for low concentration TCL and TAL.

Groundwater (Annual) Monitoring Wells - The number of total investigative samples should be 18 (for one quarter of every year, the quarterly wells are analyzed for the entire annual list). The number of duplicates should be 2. The total number of samples changes accordingly.

Groundwater (Five Year Review) Monitoring Wells - The number of total investigative samples should be 18 not 17 per the SOW.

Landfill Gas Migration Monitoring Well (Quarterly) - This should read Landfill Gas Migration Gas Probes. If gas probes are installed approximately 200 feet apart along the perimeter, this will total approximately 20 gas probes for analysis of methane.

**Page 3-5, Section 3.3 Landfill Gas Monitoring Program**

The landfill gas monitoring program should be designed to detect the off-site lateral migration of methane gas. See previous comments, specifically, Appendix B. Please modify the Landfill Gas Monitoring Program accordingly.

**Page 4-1, Section 4.1.1, Site Entrance, Fence, and Access Road**

History has indicated that trespassers break into the gates and perimeter fence on a regular basis. The integrity of the fence and gates should be inspected on a quarterly basis during groundwater and landfill gas monitoring.

**SOP-03, Sample Custody Protocols and Field Documentation**

Page 3, Typically, EPA specifies that samples will be preserved to 4° C.

**Table SOP 3-1**

Are the metals going to be filtered? Since the Group is sampling with low flow sampling techniques, they may want to consider NOT filtering the metals samples.

**SOP-10 Gas Vent Sampling**

Please modify this SOP to include gas probe sampling procedures.

**APPENDIX E CONTRACT SPECIFICATIONS**

**General Comments**

Please add a table of contents for this appendix.

The specifications are incomplete. The following sections have not been included. As such, the documents are not ready for bidding.

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Advertisement  
Instructions to Bidders  
Soils Data  
Proposal  
Bid Form with Units  
Agreement  
Performance Bond Requirements  
Payment Bond Requirements  
General Conditions  
Supplemental Conditions, if required

Please add the following specifications to this appendix.

Division 2 - Site Construction

02220 {  
Section 02222 - Grading Layer  
Section 02224 - Rooting Zone  
Section 02225 - Topsoil  
Section 02270 - Slope Protection and Erosion Control  
Section 02276 - Silt Fence  
Section 02670 - Existing Well Protection  
Section 02671 - Well Abandonment  
Section 02720 - Storm Drainage Structures and Corrugated Pipe

*Section 02396*

Section 02110, Clearing, Stripping and Grubbing, 3.04 Disposal of Debris

The shredded and chipped material should be distributed in thin layers across the site so as not to cause differential settling when they decay. The specs mention burial at the designated on-site locations, yet those "on-site locations" are not specified.

Section 02212, Drum Removal and Disposal

1.03 - Description of Work

The description of work references a location on the drawings where approximately 200-400 drums shall be removed. The drum excavation exercise noted in the SOW does not restrict drum removal to only this location. It does indicate that drums shall be removed from the former TP09 area and also states "In addition, all other structurally sound drums containing solid or liquid wastes encountered during consolidation or site preparation shall be removed to the staging area for characterization." Hence, the drum excavation,

removal and sampling may not be able to be performed in a single 10 working day period.

### **3.02 Drum Storage, Sampling, Testing, and Disposal**

Again, the Drum Sampling and Testing Plan should be forwarded to the U.S. EPA for review and comment.

JON - The laboratory for the RCRA characterization of drum contents has not been specified. Nor is it included in the QAPP.

### **3.14 - Preconstruction Material Quality Evaluation, A. Type 1 Drain Layer**

The testing frequency is inconsistent with that specified on Page 4-19 of Appendix C. Please resolve.

### **3.15 - Construction Quality Control, B and C.**

The testing frequencies and test specifications are inconsistent with those specified in Appendix C. Please resolve.

### **Section 02936 Seeding, 1.02 - Seed Mixture**

Big and Little Bluestream should likely be Big and Little Bluestem.

## **VOLUME 2 - HEALTH AND SAFETY PLAN**

1. There are several inconsistencies noted throughout the plan. Several examples are as follows:
  - a. Page 1-1 states the plan has an expiration date of December 31, 2003, yet on Page 3-1, the expiration date is given as December 31, 2005.
  - b. Page 4-1 refers to rabid animals and snakes as potential biological hazards, yet Section 4.3 makes no mention of the animals or snakes.
  - c. Section 4.4 refers to methane as a flammable hazard, but does not refer to hydrogen sulfide. However, hydrogen sulfide is referred to in other sections (i.e., Section 6.2).
  - d. Section 5.6 provides the daily check and the donning procedure for respirators;

however, the daily check includes an inspection of the lens for a full face respirator, yet the donning procedures are for a quartermask or halfmask only.

- e. Section 5.7 is entitled: "Project Manager Notification," yet the section only describes notifications of the Site Safety Officer.
- f. Under Section 6.2, action levels are specified for benzene and vinyl chloride. The PEL for benzene is 1 ppm, the PEL for vinyl chloride is also 1 ppm. The action levels are based on Draeger tube results, which are typically associated with a 25 percent error. The action level for benzene is set at 0.5 ppm (which accounts for the error), whereas the action level for vinyl chloride is 1 ppm (which does not account for the error).
- g. Inconsistent use of "shall" and "should". For example, in Section 6.1, the first paragraph requires recording of results; however, under each specific equipment, the recording of readings appears to be non-mandatory (should). In Section 6.4, if action levels are exceeded, the section states that mitigative measures should be investigated (again, infers not mandatory).

Suggest the plan be reviewed to ensure that inconsistencies are identified and corrected.

- 2. The plan does not adequately address the requirements of the OSHA HAZWOPER regulations, the Design Specifications, or the Remedial Action Workplan. The following provide some examples:
  - a. OSHA 1910.120 - general functions and responsibilities of all personnel needed for the site operations. The Project Manager, Corporate Health and Safety Officer, and Site Safety Officer are described, but all other personnel (i.e., employees), and the Engineer (as referenced in the Contingency and Emergency Response section are not included.
  - b. Section 01450 Health and Safety (Design Specification)- Fire extinguishers (10 pound minimum capacity) shall be available. There is no mention of whether fire extinguishers will be available for use by Woodward-Clyde personnel or if they are trained and allowed to use such fire extinguishers.
  - c. Remedial Action Workplan- Drums of solid and liquid materials are planned for excavation and possible overpack. However, a Spill Prevention, Control, and Countermeasures (SPCC) Plan is not included in the Health and Safety Plan.

All three documents should be reviewed and the Health and Safety Plan modified to address all the requirements.

3. The following are potential hazards not specifically addressed in the plan, or are not in compliance with Michigan OSHA regulations:
  - a. Poisonous plants are not addressed under the biological section. Also, historically, bees apparently have been a recognized hazard at the site.
  - b. The time frame for injury notification is not specified. While not specifically regulated, it is not clear how Woodward-Clyde intends to comply with the Michigan requirement for notification of multiple injuries or a fatality within the legally specified time frame.
  - c. The plan specifies the use of the OSHA Poster, not the Michigan Safety and Health Poster.
  - d. The use of a utility locator service is not addressed in the plan. The plan should include reference to the contacting of MISS DIG (Michigan's utility locator service) prior to digging.
  - e. Physical information on the anticipated chemicals are not provided.
  - f. Michigan (MIOSHA) regulations state that areas with an atmosphere which exceeds 10 percent of the LEL are considered hazardous. Throughout the Health and Safety Plan, the hazardous atmosphere is defined as greater than 20 percent of the LEL.
  - g. The Emergency Response plan shall include the provisions of the OSHA Emergency Action and Fire Prevention Plans. Several provisions are missing, including:
    - (1) actions in the event of severe weather (i.e., tornadoes, lightning, flooding);
    - (2) potential fire sources and methods of control to minimize the risk of fire.; and
    - (3) specific employee responsibilities under the plans.

**4. Miscellaneous comments:**

- a. The phrase "chemical data sheets" is used in Section 4.1.1. What are these—is the intent to incorporate the requirements of OSHA 1910.120 in regards to the chemical and physical properties of the hazardous substances at the site?
- b. Section 4.5. Various discussions on relative anticipated risk (i.e., not expected) with no written explanation as to how the relative risk was determined.
- c. A clear organizational structure is not apparent as required by OSHA.
- d. What is the Hazardous Waste Incident Report? This section apparently requires ALL personnel (Woodward-Clyde and any subcontractors) to use this report for any incident or injury. If this is the case, suggest inclusion of the Report in the Model Plan.
- e. Section 5.6 states that as part of the respirator cleaning process, that the respirator be sprayed with acetone. Manufacturer's typically do not recommend the use of solvents in the cleaning of respirators, since it can result in cracking of the face piece, or fogging of the lens. Recommend that the manufacturer of the respirator(s) be contacted as to the cleaning with acetone or that acetone no longer be used.
- f. Section 4.1.1 states that the landfill contains numerous organic contaminants, including 10 VOC's, 19 semi-volatiles, 11 pesticides/PCBs, etc. Section 6.1 states that a PID with a 10.2 eV lamp may be used. However, it is unclear how the decision to use a 10.2 eV (vice an 11.7 eV) was arrived at, when apparently only 4 of the 29 VOC/SVOC's are listed under Section 4.1.1.
- g. Section 6.7 states that no elevated VOC's have been detected in the breathing zone during monitoring well installation. However, the source of this presumed previous monitoring data is not referenced.
- h. Section 6.3.1 requires fence line sampling for specific VOC compounds; however, the procedure to determine which compounds to sample, and how to sample, is not provided.
- i. Section 6.3.3 requires the use of a PID for fence line monitoring. The reasoning for use of a PID is not provided and the method for quarterly methane monitoring is not provided. Also, no mention is made of hydrogen sulfide.

- j. The action level section (Section 6.2) does not provide for action levels for the required perimeter monitoring.
- k. Review of Section 7.1 indicates inconsistencies in the selection of personnel protective equipment. For example, rubber boots and Saranex® coated Tyvek® are specified under modified level D. However, rubber is not recommended for some of the chemicals of concern (i.e., xylene(s), acetone), and Saranex® is not recommended for some of the chemicals of concern (i.e., acetone). Recommend that Section 7.1 be reviewed and modified as necessary to ensure selected PPE is compatible with all the chemicals of concern.

### **VOLUME 3 QUALITY ASSURANCE PROJECT PLAN**

#### **QAPP**

Page 1-2, almost entire page

The previous comments on the groundwater monitoring well sampling scheme apply here also.

The previous comments on the landfill gas sampling network apply here also.

Page 1-9, Section 1.5.2 Site Maps of Sampling Locations

Modifications to the groundwater sampling locations may be made if approved by U.S. EPA.

Page 2-1 Section 2.2.1 U.S. EPA Remedial Project Manager, 2nd sentence

RPM changed from "she" to "he".

Page 7-2, Section 7.2.1 List of Project Target Compounds and Detection Limits

While arsenic is the main focus of the groundwater contamination problem, vinyl chloride also exceeded it's MCL.

Table 7-6, Targeted Quantitation Limits Landfill Gas, Page 22 of 26

The sensitivity of the field instruments capable of measuring carbon dioxide and methane should be capable of at least the TLV or PEL.

## **FINAL DESIGN DRAWINGS**

### **Sheet 2**

With regards to the reference to the edge of waste in General Note 4, the edge of waste is not shown on this drawing.

### **Sheet 4**

Section C (3/4), Landfill Cover System - Why is the gas collection/drainage layer not shown? Is there any existing cover on the waste? If yes, how thick? Why is it not shown in the cross-section?

Section D (3/4), Typical Anchor Trench - How does this section relate to the waste boundary?

### **Sheet 5**

The following details were not found on Sheet 6; Detail 1 (5/6), Detail 2 (5/6), and Detail 4 (5/6).

With regards to the perimeter drain, it is unclear from the drawings which nodules are tee connections with outlets. If all have outlets label (detail) as typical and draw outlet pipe of each nodule to show length.

### **Sheet 6**

Section E (6/6) - The FML ends at perimeter drain; however, there are several locations where perimeter drain is within waste boundary. FML should extend beyond waste boundary before anchor is installed. Section E (6/6) requires modification as additional section drawn to show waste boundary.

### **Sheet 7**

The gas system does not provide for penetration into the landfill but relies on the generated gas rising to the surface where it is collected and discharged. Gas pressure will relieve itself in the direction of least resistance--this could be laterally. Considerations should be given to placement of gas probes around the perimeter of the landfill to verify there is no lateral gas migration and the system is effective in containing and controlling the generated gas. After sampling has established no lateral migration, it could be discontinued.

### **Sheet 8**

Detail D - Stainless steel clamps are recommended.

Detail C - It is difficult to understand end cap requirements. Additional detail would be helpful.

### **Sheet 9**

Detail 3 - Suggest rip rap around inlet and outlet to RCP beneath roadway to control erosion.

### **Additional comments on items omitted from drawings**

Detail for Warning Sign to be posted on fences.

Reference was made to textured FML and smooth FML. The drawings should reflect where textured is to be installed and where smooth is to be installed.

The plans are lacking dimensions and detail, they are labeled "not for construction." They are therefore not in a form that is biddable.

### **SPECIFICATIONS**

#### **General**

Specifications are incomplete. The following sections have not been included. As such, the documents are not ready for bidding.

- Advertisement

- Instructions to Bidders
- Soils Data
- Proposal
- Bid Form with Units
- Agreement
- Performance Bond Requirements
- Payment Bond Requirements
- General Conditions
- Supplemental Conditions if required

Section 0293C, 3.05, Planting Season needs to be filled in. Suggest May 1 to October 10 (MDOT), Section 8.16.03 C4.

Earthwork 0220-4, 1.06, Mobility A - omit "relatively"

References: add AASHTO and ASTM

Section 3.13 - pipe culvert to be laid to elevation on drawings..... Drawings show no elevation.

Materials: No gradation specified for gas collection stone layer. Recommend gradation with loss by wash (#200 sieve) and indication of type of particles allowed similar to Type 1 drainage.

Gas collection layer does not function as a gas collection layer unless vertical pipes are perforated within the layers. Suggest vertical perforated pipe and washed stone to within 4.0 inches (plus or minus) of the FML.

Quality Assurance/Quality Control

Tests, methods and requirements are numerous. A table should be prepared that summarizes all required tests. It should include test description, method description, frequency, and requirements.

**Mr. John Seymour**  
**June 11, 1997**

**Comments on Final Design**  
**Page 16**

Please address the above comments, make any necessary revisions to the design and workplan documents in order to provide us with an approvable design and call me if you have any questions about these comments.

Sincerely,

A handwritten signature in cursive script that reads "Jon W. Peterson". The signature is written in dark ink and is positioned above the printed name.

Jon Peterson, RPM  
Section #6